

Next-Generation Information and Communication Strategy of the Ministry of Defense

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Ministry of Defense**

Background and Purpose of Formulating Strategy

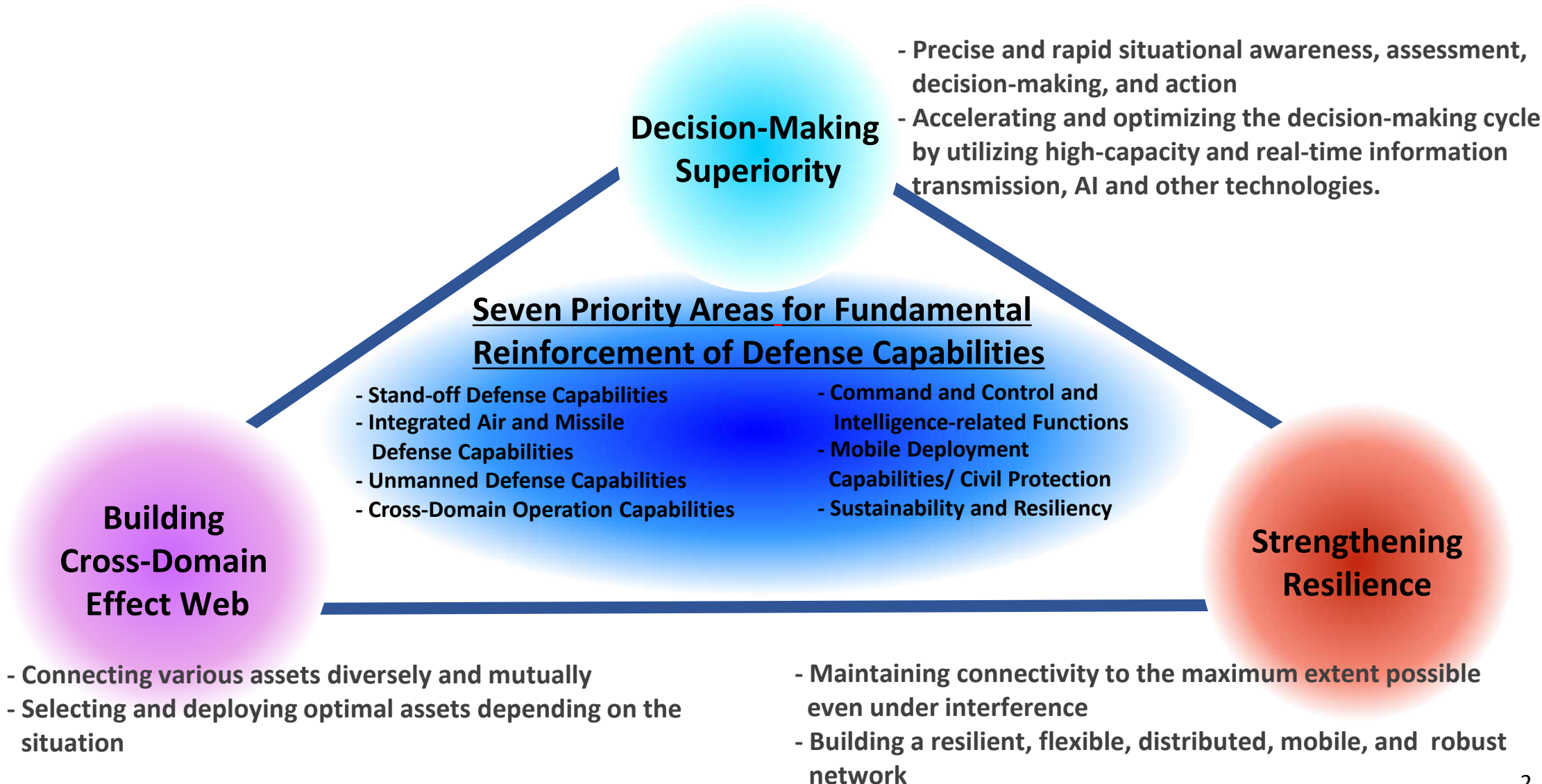
- ◆ **Emergence of the Game-Changing Advanced Technologies , and the New Ways of Warfare Enabled by Cutting-Edge Technologies**
- ◆ **Technological Advancement and Fundamental Importance of Information and Communication Technology (ICT)**
 - With the technological advancement and the emergence of AI, the ICT utilization has been accelerating – exemplified by the development of networks capable of real-time and high-capacity communication, and advanced data processing and analysis.
 - From peacetime to disasters and contingencies, the information and communication infrastructure serves as the foundation for both the people’s daily lives and the Self-Defense Forces’ operations. Securing technological superiority and autonomy in the ICT is critically important for Japan’s national security.
- ◆ **Necessity of MOD/SDF’s Active Utilization of the Next-Generation ICT**
 - Adopting the rapidly advancing next-generation ICT is essential for achieving fundamental reinforcement of defense capabilities.
 - Leveraging the scale of organization, the MOD/SDF actively utilizes the next-generation ICT, which supports the R&D, and social implementation of civilian technologies, creating a virtuous cycle that enhances both defense capabilities and economic strength.

Through the formulation of Next-Generation Information and Communication Strategy of the Ministry of Defense, MOD will:

1. ensure policy consistency and promote cross-departmental discussions
2. clarify the MOD’s approach, promote the early adoption and development of civilian technologies, and deepen collaboration with external partners.

Approaches to Utilization of Next-Generation ICT

- ◆ Adoption of the advanced next-generation ICT is key to strengthen the seven functions and capabilities outlined in the National Defense Strategy.
- ◆ Approaches to the utilization of the next-generation ICT is as shown below.



Direction for Specific Initiatives

Development of Information and Communication Platform that Serves as Foundation of All Initiatives

- ◆ The next-generation communication infrastructure is essential as a foundational platform to realize all approaches, including decision-making superiority, cross-domain effect web, and strengthening resilience, and to reinforce and operationalize the “seven priority areas.”



Key Challenges in the existing Defense Information Infrastructure (DII) and the systems, etc.

- ◆ **Networks and systems are not necessarily planned and developed in an integrated concept.**
 - It is difficult to efficiently allocate information and communication resources in response to changing operational needs, such as increased data processing demands.
- ◆ **Development and operation of siloed systems and assets tailored to the operational needs of each Self-Defense Forces.**
 - Cross-organizational data utilization and situational awareness are constrained.

Establishment of New Defense Information Infrastructure (tentative name) as Foundational Platform

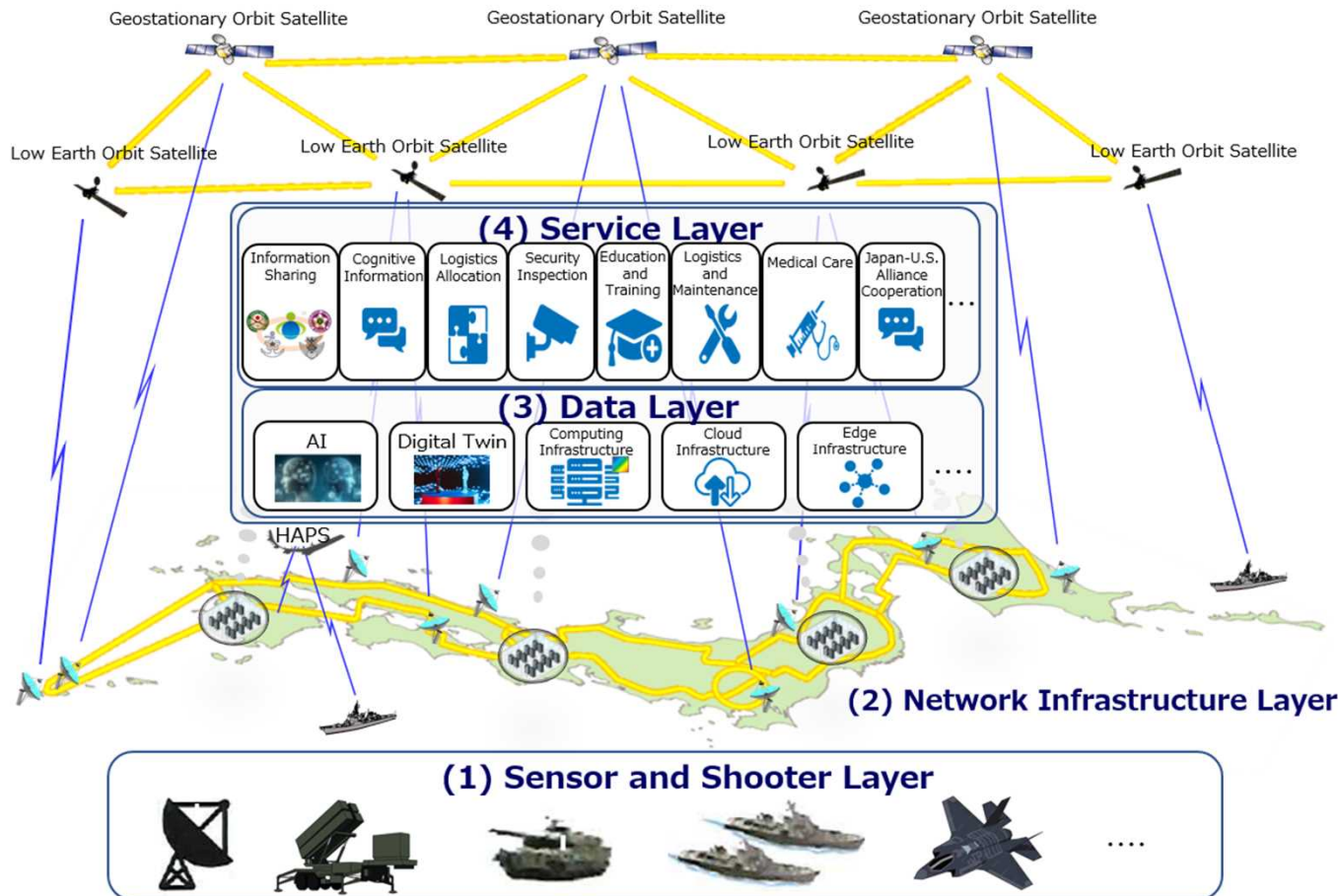
- Building networks and systems under an integrated concept
- Flexibly Developing mission-critical functions for various operations as services on a foundation platform
- Distributing system components in a dispersed manner to ensure redundancy and prevent total functional loss under any circumstances
- Utilizing various types of data cross-organizationally
- Pursuing an agile development approach to appropriately and promptly reflect operational requirements
- Ensuring robust and flexible security through adoption of Zero-Trust concept and utilization of next-generation cryptographic communication technologies

Architecture of New Defense Information Infrastructure (tentative name)

The Infrastructure:

- ◆ consists of (1) Sensor and Shooter Layer, (2) Network Infrastructure Layer, (3) Data Layer, and (4) Service Layer;
- ◆ organically integrates and utilizes data collected through various assets;
- ◆ and responds to a changing character of warfare and technological advancements, and flexibly provides the functions required for various operations in the form of services

Image of Architecture



Sensor and Shooter Layer

- Maintaining the persistent warfare capabilities by possessing and combining both high-precision, high-cost assets and mass-produced, low-cost assets

Network Infrastructure Layer

- Ensuring high-speed, high-capacity, and low-latency communication
- Implementing multi-network architecture

Data Layer

- Optimizing the architecture through restructure and integration to ensure timely and reliable access

Service Layer

- Building an environment that enables flexible development, modification, addition, and deletion

Comprehensive Initiatives that Underpin Policy Implementation

- ◆ It is essential for MOD to not only present concepts related to systems and networks for Defense Information Infrastructure and various assets, but also to package and implement supporting policies as part of a comprehensive organizational framework.
- ◆ In particular, efforts are strengthened in the areas of (1) human resources development, (2) public-private partnership, and (3) cooperation with allied and like-minded nations.

Recruitment of Workforce

- ◆ Appropriate recruitment and development of experts such as data analysts and data scientists.
- ◆ Flexible utilization of existing recruitment frameworks, along with the promotion of new recruitment of external specialists and highly motivated individuals.

Enhancement of Public-Private Partnership

- ◆ Initiatives to strengthen the resilience of supply chains and enhance autonomy in the information communication networks for the defense industry and related sectors.
- ◆ Leverage of the scale of MOD/SDF as a large organization and the needs for labor-saving and unmanned operations to swiftly adopt cutting-edge civilian technologies
- ◆ Reinforcement of international competitiveness and defense capabilities through shortening the time for social implementation and international standardization, and improving investment turnover ratio.

Collaboration with Allied and Like-Minded Nations

- ◆ Stay ahead with the latest technological trends in the rapidly evolving ICT.
- ◆ Establishment of the network infrastructure with a view to further enhancing interoperability with allied and like-minded nations.

Toward Realization of the Next-Generation Information and Communication Strategy

- ◆ **A continued review is being conducted to determine the future direction of the next-generation information and communication for MOD/SDF, in light of the rapidly evolving ICT trends and in anticipation of a future warfare characteristic.**
- ◆ **Feasible initiatives are steadily implemented** in light of the rapid pace of technological innovation of ICT.
 - ✓ As a first step, the flexible and scalable development of MOD Cloud is promoted in anticipation of building the New Defense Information Infrastructure (tentative name).
 - ✓ In the future, MOD moves beyond the current on-premises-centric infrastructure and advance the shift toward a hybrid cloud.
- ◆ In technological fields critically important to this strategy, **MOD will actively engage in promoting technological development and accelerate its early implementation.**
- ◆ **Efforts are made to optimize project efficiency and reduce costs** through the planning and implementation of the initiatives.

(Figure on the right)
Conceptual image of the MOD Cloud
as a foundational platform

